

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

15 JUN 2005

Applicant's or agent's file reference A158135	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IB 03/06442	International filing date (<i>day/month/year</i>) 23.12.2003	Priority date (<i>day/month/year</i>) 02.01.2003
International Patent Classification (IPC) or both national classification and IPC G01N33/00		
Applicant SOCIEDAD ESPANOLA DE CARBUROS METALICOS, S.A.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 14.07.2004	Date of completion of this report 21.12.2004
Name and mailing address of the international preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 </div> </div>	Authorized Officer Joyce, D Telephone No. +31 70 340-3093



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International Application No. **15 JUN 2005** PCT/JP 03/06442
JC20 Rec d PCT/JP 15 JUN 2005

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-13 as originally filed

Claims, Numbers

1-9 as originally filed

Drawings, Sheets

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

10/585

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

JC20 Rec'd PCT/PTO 1 5 JUN 2005
International Application No. 5 JCN/2005/06442

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-9
	No: Claims	
Inventive step (IS)	Yes: Claims	1-9
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB 03/06442

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following documents:

- D1: US-A-6 122 954 (BOWERS WILLIAM D) 26 September 2000 (2000-09-26)
- D2: LLOBET E ET AL: "Quantitative vapor analysis using the transient response of non-selective thick-film tin oxide gas sensors" 1997 INTERNATIONAL CONFERENCE ON SOLID-STATE SENSORS AND ACTUATORS. DIGEST OF TECHNICAL PAPERS. TRANSDUCERS 97. CHICAGO, IL, JUNE 16 - 19, 1997. SESSIONS 3A1 - 4D3. PAPERS NO. 3A1.01 - 4D3.14P, INTERNATIONAL CONFERENCE ON SOLID-STATE SENSORS AND ACTU, vol. 2, 16 June 1997 (1997-06-16), pages 971-974, XP010240638 ISBN: 0-7803-3829-4
- D3: HOEFER U ET AL: "CO and CO₂ thin-film SnO₂ gas sensors on Si substrates" SENSORS AND ACTUATORS B, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. 22, no. 2, 1 November 1994 (1994-11-01), pages 115-119, XP004012434 ISSN: 0925-4005
- D4: KIM D H ET AL: "CO₂-sensing characteristics of SnO₂ thick film by coating lanthanum oxide" SENSORS AND ACTUATORS B, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. 62, no. 1, January 2000 (2000-01), pages 61-66, XP004184491 ISSN: 0925-4005
- D5: DE 195 34 557 A (FRAUNHOFER GES FORSCHUNG) 20 March 1997 (1997-03-20)

1.1 Document D1 which is considered to represent the closest prior art relates to a system for the detection of reducing and oxidizing gases in a carrier gas (D1 Col 6 line 7-20), which comprises a plurality of detection means (Col 7 line 5-6), means for processing and control of acquisition and data recognition (Col 10 line 63-67), whereby the system includes means for connecting said carrier gas to a measuring chamber which contains said sensors, and providing real time recognition of said gases (cf., D1 Col 4 line 21-27, Fig:1)

1.2 Vis-a-vis this known device the subject-matter of claim 1 differs from this known

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB 03/06442

system in that the analysis is being made with metal oxide semiconductor sensors, the data analysis including a system of real-time recognition of said gases, by providing a diagram with delimited decision zones. Hence the subject-matter of claim 1 is novel.

1.3 Document D2 does disclose the analysis of volatile organic vapours (VOC's) using SnO₂ (tin dioxide) sensors but this is in relation only to reducing vapours (cf., D2 Page 971 RHC line 24-27) and is not concerned with the concentration of oxidising &/or reducing gases in a carrier gas as is required by present claim 1.

1.4 As neither problem nor solution are considered obvious per se, the present independent apparatus claim 1 is seen to involve an inventive step in the sense of Article 33(3) PCT.

1.5 The industrial applicability of the apparatus of claim 1 is evident, so that therefore all the requirements of Article 33 PCT are met.

1.6 Dependent claims 2-9 define further refinements of the new and inventive idea underlying independent claims 1 and 6, and also meet the requirements of Article 33 PCT for the same reasons as given above.